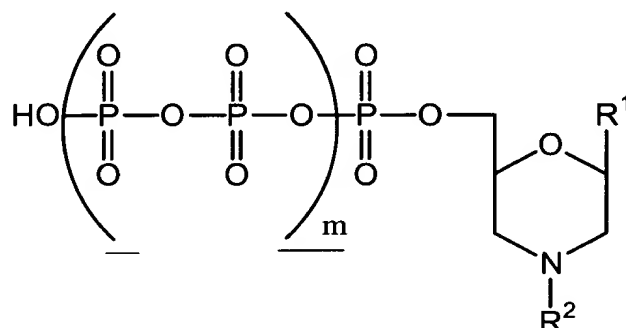
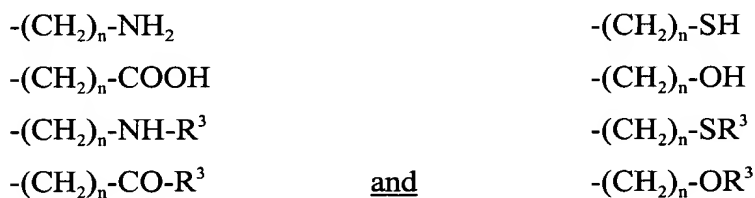


1. (Currently Amended) Process for manufacturing a 3²-labelled nucleic acid (~~DNA or RNA~~) fragment, which comprises the enzymatic incorporation of a nucleotide derivative having as precursor a compound of formula:



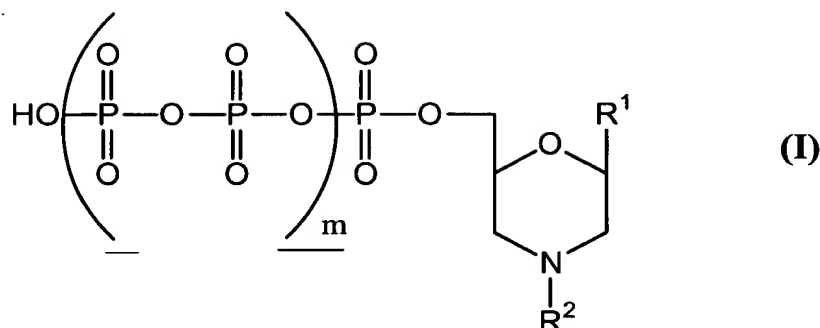
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(I)

in which R¹ represents a nucleic base, m is 1 and R² is selected from the represents a group consisting of ~~corresponding to one of the following formulae:~~



in which n is an integer ranging from 1 to 12 and R³ is selected from the a group consisting of ~~derived from~~ a label, a protein, an enzyme, a fatty acid ~~or~~ and a peptide, at the 3' OH end of the nucleic acid fragment.

2. (Currently Amended) Process for modifying a nucleic acid fragment by enzymatic incorporation ~~at the 3' end of~~ the nucleic acid fragment a modified morpholino nucleotide having as precursor a compound corresponding to the formula:

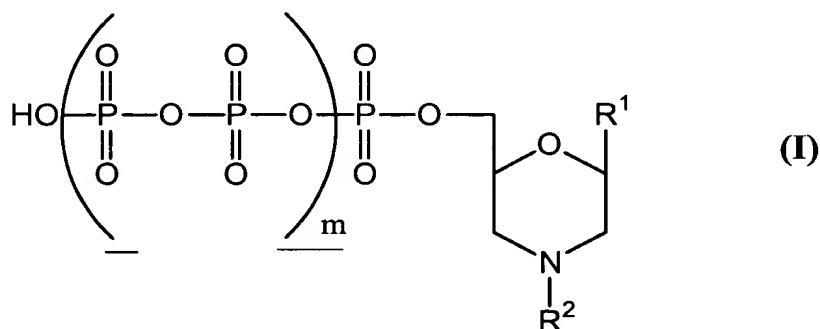


in which R¹ represents a nucleic base, m is 1 and R² is selected from the group consisting of ~~represents a group corresponding to one of the following formulae:~~

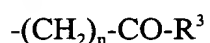
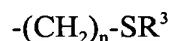
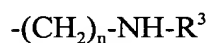
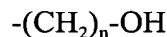
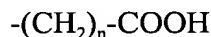
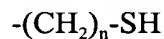
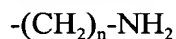
- (CH₂)_n-NH-R³
- (CH₂)_n-CO-R³
- (CH₂)_n-SR³
- and - (CH₂)_n-OR³

in which n is an integer ranging from 1 to 12 and R³ is selected from the group consisting of ~~represents a compound chosen from~~ photo-crosslinking agents, fatty acids, hydrophobic peptides, antibodies, enzymes and fluorophores.

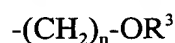
3. (Currently Amended) Process for sequencing a nucleic acid (~~DNA or RNA~~) by the technique of enzymatic polymerization of the sequence complementary to this nucleic acid using chain terminators, in which at least one of the chain terminators has as precursor a compound corresponding to the formula:



in which R^1 represents a nucleic base, m is 1 and R^2 is selected from the ~~represents a~~ group consisting corresponding to one of the following formulae:



and



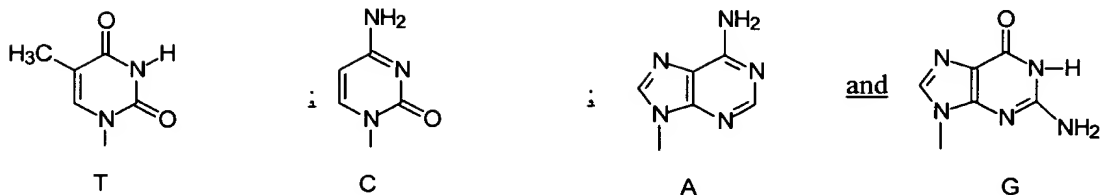
in which n is an integer ranging from 1 to 12 and R^3 is selected from the group consisting of a group derived from a label, a protein, an enzyme, a fatty acid or and a peptide.

4. (Currently Amended) Process according to Claim 1, in which ~~the~~ an enzyme of said enzymatic incorporation is the Klenow fragment of DNA polymerase.

5. (Currently Amended) Process according to Claim 1, in which ~~the~~ an enzyme of said enzymatic incorporation is selected from the group consisting of a heat-resistant polymerase of a *Thermophilus bacterium*, a ~~or~~ terminal transferase and ~~or~~ reverse transcriptase.

6. (Currently Amended) Process according to Claim 1, in which the nucleic base is a natural nucleic base selected from the group consisting of ~~chosen from~~ adenine, guanine, cytosine, thymine, uracil, xanthine, hypoxanthine and 2-aminopurine, and derivatives thereof.

7. (Currently Amended) Process according to Claim 1, in which R^1 is selected from the group consisting of ~~corresponds to one of the following formulae:~~



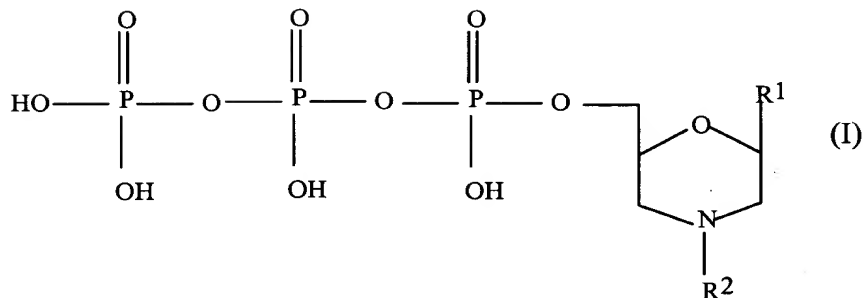
8. (Currently Amended) Process according to Claim 1, in which the label is selected from the group consisting of ~~chosen from~~ radioactive products, luminescent products, electroluminescent and fluorescent products, molecules capable of coupling with other molecules, molecules which allow interactions of the antigen-antibody type, and enzymatic labels.

9. (Currently Amended) Process according to Claim ~~1~~ 8, in which R³ the label is a fluorophore.

10. (Currently Amended) Process according to Claim 9, in which R³ is selected from the group consisting of ~~chosen from~~ fluorescein-derivatives, biotin derivatives and rhodamine derivatives.

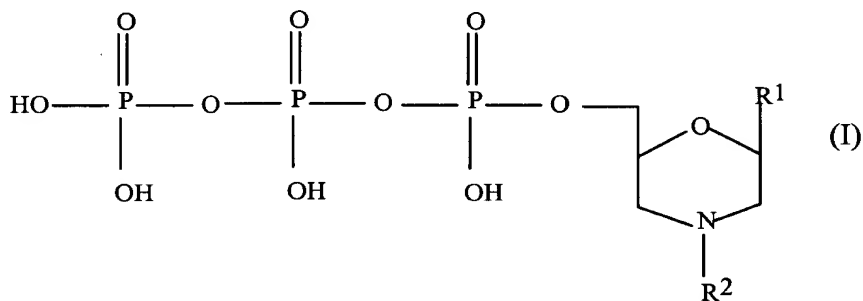
11. (Currently Amended) Process according to Claim 1, in which the nucleotide derivative, ~~the modified morpholino-nucleotide or the chain terminator~~ is compound (I) in ~~monophosphate form~~ which m is 0.

12. (Currently Amended) Morpholino-nucleotide corresponding to the formula:



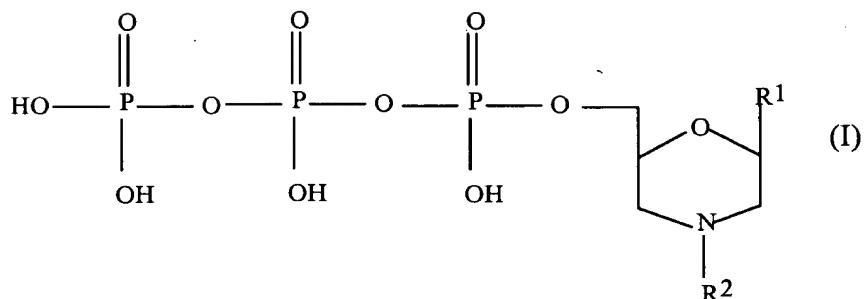
in which R¹ is adenine and R² represents -CH₂-COOH, -(CH₂)₄-NH₂ or -(CH₂)₄-NH-R³
~~with wherein R³ representing a group derived from is fluorescein.~~

13. (Currently Amended) Morpholino-nucleotide of formula:



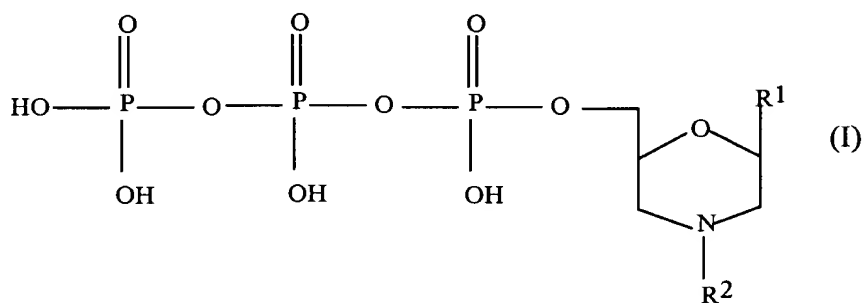
in which R¹ is thymine and R² represents -CH₂-COOH, -(CH₂)₄-NH₂ or -(CH₂)₄-NH-R³
~~with wherein R³ representing a group derived from is fluorescein.~~

14. (Currently Amended) Morpholino-nucleotide corresponding to the formula:



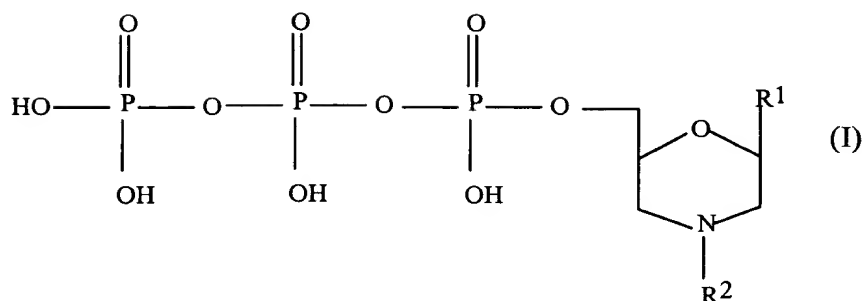
in which R¹ is cytosine and R² represents -CH₂-COOH, -(CH₂)₄-NH₂ or -(CH₂)₄-NH-R³
~~with wherein R³ representing a group derived from is fluorescein.~~

15. (Currently Amended) Morpholino-nucleotide corresponding to the formula:

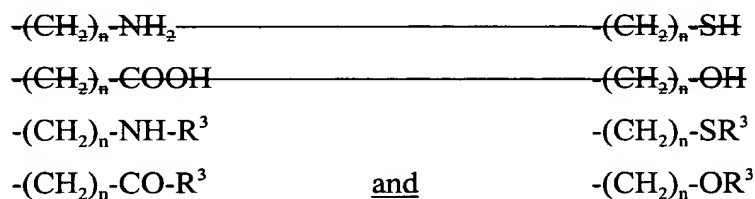


in which R¹ is guanine and R² represents -CH₂-COOH, -(CH₂)₄-NH₂ or -(CH₂)₄-NH-R³
~~with wherein R³ representing a group derived from is fluorescein.~~

16. (Currently Amended) Process for manufacturing a morpholino-nucleotide of formula (I):



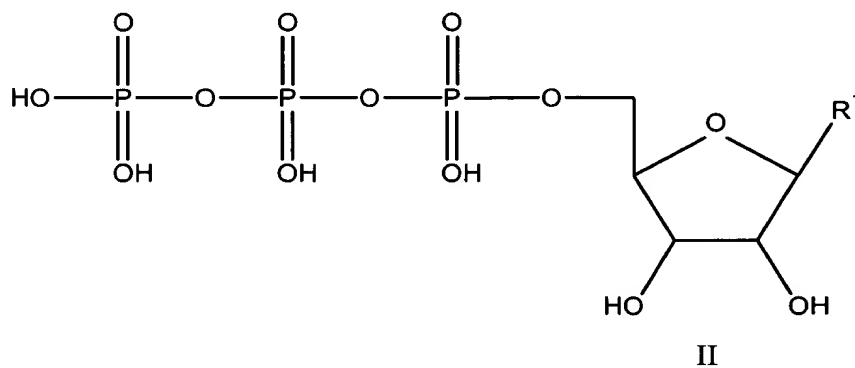
in which R¹ represents a nucleic base and R² is selected from the ~~represents a group consisting of corresponding to one of the following formulae:~~



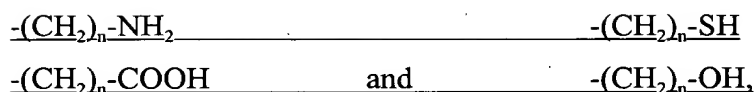
in which n is an integer ranging from 1 to 12 and R³ is selected from the a group consisting of ~~derived from a label, from a protein, from an enzyme, and from a fatty acid or from a peptide,~~

said process comprising the reaction of

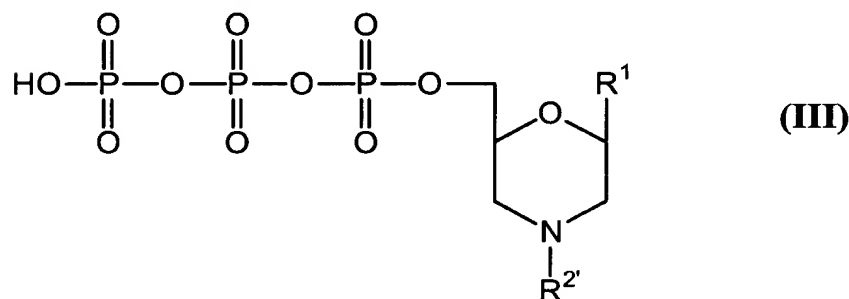
a) reacting a nucleoside triphosphate of formula (II):



wherein ~~in which~~ R¹ has the meaning given above, with a periodate, a compound of formula R²-NH₂ ~~in which R² has the meaning given above~~ R^{2'}-NH₂, wherein R^{2'} is selected from the group consisting of:



and sodium borohydride to form a morpholino-nucleotide of formula (III):



wherein $\text{R}^{2'}$ has the meaning given above;

b) isolating the morpholino-nucleotide of formula (III); and

c) attaching to the morpholino-nucleotide of formula (III) the label, the enzyme and the fatty acid to form the morpholino-nucleotide of formula (I).

17. (Cancelled)

18. (Currently Amended) Process according to claim 2, in which ~~the~~ an enzyme of said enzymatic incorporation is the Klenow fragment of DNA polymerase.

19. (Currently Amended) Process according to Claim 3, in which ~~the~~ an enzyme of said technique of enzymatic polymerization is the Klenow fragment of DNA polymerase.

20. (Currently Amended) Process according to Claim 2, in which ~~the~~ an enzyme of said enzymatic incorporation is selected from the group consisting of a heat-resistant polymerase of a Thermophilus bacterium, a ~~or~~ terminal transferase and ~~or~~ reverse transcriptase.

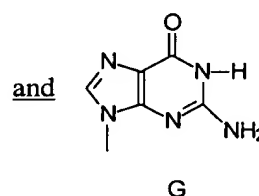
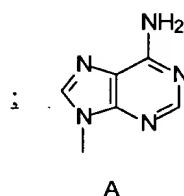
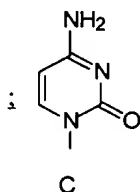
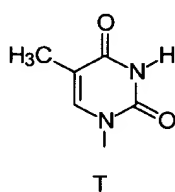
21. (Currently Amended) Process according to Claim 3, in which ~~the~~ an enzyme of said technique of enzymatic polymerization is selected from the group consisting of a heat-resistant polymerase of a Thermophilus bacterium, a ~~or~~ terminal transferase and ~~or~~ reverse

transcriptase.

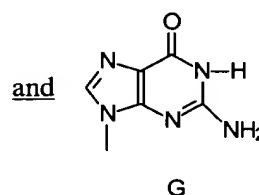
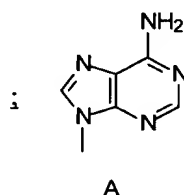
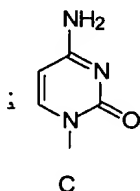
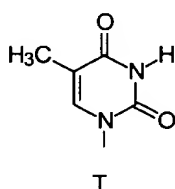
22. (Currently Amended) Process according to Claim 2 in which the nucleic base is a natural nucleic base selected from the group consisting of ~~chosen from~~ adenine, guanine, cytosine, thymine, uracil, xanthine, hypoxanthine and 2-aminopurine, and derivatives thereof.

23. (Currently Amended) Process according to Claim 3 in which the nucleic base is a natural nucleic base selected from the group consisting of ~~chosen from~~ adenine, guanine, cytosine, thymine, uracil, xanthine, hypoxanthine and 2-aminopurine, and derivatives thereof.


24. (Currently Amended) Process according to Claim 2 in which R¹ is selected from the group consisting of ~~corresponds to one of the following formulae:~~



25. (Currently Amended) Process according to Claim 3 in which R¹ is selected from the group consisting of ~~corresponds to one of the following formulae:~~



26. (Currently Amended) Process according to Claim 2, in which the label is selected from the group consisting of ~~chosen from~~ radioactive products, luminescent products, electroluminescent and fluorescent products, molecules capable of coupling with other molecules, molecules which allow interactions of the antigen-antibody type, and enzymatic labels.


 27. (Currently Amended) Process according to Claim 3, in which the label is selected from the group consisting of ~~chosen from~~ radioactive products, luminescent products, electroluminescent and fluorescent products, molecules capable of coupling with other molecules, molecules which allow interactions of the antigen-antibody type, and enzymatic labels.

28. (Original) Process according to Claim 2, in which R^3 is a fluorophore.

29. (Original) Process according to Claim 3, in which R^3 is a fluorophore.90

30. (Currently Amended) Process according to Claim 28, in which R^3 is selected from the group consisting of ~~chosen from~~ fluorescein-derivatives, biotin derivatives and rhodamine derivatives.

31. (Currently Amended) Process according to Claim 29, in which R^3 is selected from the group consisting of ~~chosen from~~ fluorescein-derivatives, biotin derivatives and rhodamine derivatives.

 32. (Currently Amended) Process according to Claim 2, in which ~~the derivative, the~~ modified morpholino-nucleotide ~~or the chain terminator~~ is compound (I) in ~~monophosphate form~~ which m is 0.

33. (Currently Amended) Process according to Claim 3, in which ~~the derivative, the~~

By ~~modified morpholino-nucleotide or~~ said at least one of the chain terminators is compound (I) in
monophosphate form which m is 0.
